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ABSTRACT OF THE DISCLOSURE

A plastic substrate for OLED, fabrication method thereof and device using the substrate. The OLED comprises a plastic substrate with a deposition film of predetermined thickness formed thereon by plasma CVD. The deposition film has the formula $\text{SiO}_e\text{CaH}_b\text{X}_c\text{Y}_d\text{Z}_f$ ($e \leq 2$, $2-e=a+b+c+d+f$), wherein X, Y and Z are periodic table IA, IIA, IIIA, IVA, VA, VIA or VIIA elements excepting H. X, Y and Z also can be selected from the group consisting of Sc, Ti, V, Cr, Mn, Fe, Co, Ni, Cu, Zn, Pd, Ag, Pt and Au. The OLED with the plastic substrate has both glass and plastic properties, including high temperature tolerance, good gas and liquid resistance, superior planarity, and high transparency and high flexibility.